

## Abstract

Method for obtaining and expanding postembryonic hematopoietic stem cells from umbilical cord blood while avoiding unwanted differentiation. Initial cells from umbilical cord blood are  
5 proliferated and multiplied *ex vivo* in a stroma-free medium and in the presence of a regio-  
modified glycan or glycosaminoglycan. The regio-modified glycan or glycosaminoglycan, e.g.  
a heparin derivative, is N-desulfated, and N-reacetylated or N-reacylated, in essence, on C2  
atoms. The heparin derivative advantageously comprises less than 5 percent of C3-O-  
sulfate, at least 60 percent C2-O-sulfate, and it is preferably added in a quantity of 15 to 50  
10 mg/L to the medium in order to stop an unwanted differentiation. The stem cells generated in  
this manner can differentiate, after expansion, into myeloma cells and lymphatic cells, and  
they can be used as an immunotherapeutic agent against many diseases.